



National Weather Service

Storm Data and Unusual Weather Phenomena



January 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured	Estimated Damage Property Crops	Character of Storm
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MICHIGAN, East

MIZ047>049-053>055-060>063-068>070-075>076-082>083 **Midland - Bay - Huron - Saginaw - Tuscola - Sanilac - Shiawassee - Genesee - Lapeer - St. Clair - Livingston - Oakland - Macomb - Washtenaw - Wayne - Lenawee - Monroe**

02	0900EST	0	0	50K	Heavy Snow
03	0500EST				

MIZ060>061-068>070-075>076-082>083 **Shiawassee - Genesee - Livingston - Oakland - Macomb - Washtenaw - Wayne - Lenawee - Monroe**

02	1300EST	0	0	Blizzard
	1600EST			

A strong low pressure system moved from the mid Mississippi Valley on the morning of the 2nd, to northern Lake Huron by the afternoon of the 3rd. This low produced very heavy snow across most of the southern Great Lakes, and southeast Michigan was no exception.

Snow developed from south to north across southeast Michigan during the daylight hours of the 2nd. A combination of snow, blowing snow, and wind produced blizzard conditions across the metro Detroit area in the early afternoon. The winds subsided slightly as the snow intensified, but near-blizzard conditions were the rule into the overnight hours. The strong wind throughout the storm made it very difficult to measure snowfall accurately.

With temperatures in the teens across most of the area, the snow was very fluffy and dry - which is unusual for Michigan heavy snow events. An exception occurred late in the evening of the 2nd, as a surge of warmer air struggled into extreme southeast Michigan. Temperatures rose to around freezing for a few hours, and some freezing rain occurred in Monroe County. Thundersnow at the leading edge of warm air surge added to snowfall totals in the far southeast. Cold air returned to this corner of the state soon after midnight.

Snowfall amounts by county:

Bay County: 11" in Essexville; 9" in Linwood and Bay City.
Genesee County: 7 to 10" in the Fenton/Linden area; 9" in Flushing and Flint.
Huron County: 10" near Kinde and Verona; 7" in Bad Axe; 6" in Port Hope.
Lapeer County: 12" in Imlay City; anywhere from 6 to 12" near the city of Lapeer; 9" in Dryden.
Lenawee County: 16" in Tecumseh; 14" in Clinton; 12" in Hudson and Morenci; 10" in Adrian.
Livingston County: 10" in Brighton; 8" in Howell.
Macomb County: 17" near Mt Clemens; 15" in Roseville; 12" in Romeo, Richmond, and St Clair Shores; 11" near New Baltimore.
Midland County: 10" in the city of Midland; 7" in Mount Haley Township.
Monroe County: 14" in Milan Township; 13" in the city of Monroe and Dundee.
Oakland County: 15" in Royal Oak; 14" in Ferndale; 13" in South Lyon; 12" in Milford, Clarkston, and White Lake; 11" in West Bloomfield; 10" in Rochester Hills, Farmington, and Waterford; 8" in Holly and Oxford.
St Clair County: 13" in Port Huron; 11" in Ruby; 6 to 12" in Yale; 8" in Avoca.
Saginaw County: 10" in Frankenmuth; 9" in St Charles; 8" in the city of Saginaw; 6" in Freeland.
Sanilac County: 9 to 11" in Marlette; 7 to 10" in Sandusky; 9" in Croswell; 7" in Brown City.
Shiawassee County: 9" in Owosso; 6 to 9" in Byron; 7" in Morrice; 6" in Corunna.
Tuscola County: 9 to 11" in Caro; 9" in Cass City; 8" in Akron; 7 to 9" in Vassar; 7" in Millington.
Washtenaw County: 16" in Ann Arbor; 15" in Dexter; 13 to 16" in Saline; 12" in Ypsilanti.
Wayne County: 14" in Plymouth; 12 to 14" in Northville; 13" in Dearborn; 12" in Westland, Harper Woods, Canton, Wyandotte, and Grosse Pointe Farms; 11" in Romulus.

Drifts up to seven feet high were reported in Lenawee, Monroe, and Washtenaw Counties. President Clinton would eventually declare Lenawee, Macomb, Oakland, Washtenaw, and Wayne Counties as federal disaster areas

All told, this was one of the worst snowstorms of the past 25 years, and the effects were far-reaching. The storm was well advertised, and a run on grocery stores occurred early in the day. Many stores ran out of staples like bread and milk. Most businesses closed their doors early on the 2nd, to allow employees to get home while they still could. After the snow, the run was on snow removal equipment, with snowblowers, shovels, and salt all very hard to find. The weight of the snow tore a gash in the roof of the Pontiac Silverdome. Festivities surrounding the inaugural of Governor John Engler were postponed. Most schools closed the Monday and Tuesday after the storm (the 2nd was a Saturday), and some schools stayed closed for Wednesday as well

Detroit Metro Airport (DTW) was severely impacted by the storm. DTW remained open on the 2nd, but visibility at DTW, combined with deteriorating conditions at other airports in the region, resulted in few (if any) incoming and outgoing flights from afternoon on. After closing to clean the runways on the morning of the 3rd (a Sunday), DTW reopened to incoming flights. Unfortunately, although the runways were clear, an insufficient number of arrival/departure gates were usable. By the time this was realized, and incoming air traffic halted, close to 50 planes had landed at DTW without a place to disembark. In an incident that



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MICHIGAN, East

received national media attention, some passengers were stranded in their planes for eight hours until they could disembark. Full operations at DTW would not be resumed until the 6th.

The heavy snow also focused media attention on the city of Detroit. According to city policy, residential streets were not plowed after a heavy snow. This resulted in effectively shutting down parts of the city for almost two weeks, as residents could not get out of their neighborhoods and onto the main streets. Schools were closed for days, as students could not safely get to and from school. In the wake of the storm, this snow-removal policy was being reassessed.

MIZ068>070-075>076-082>083

Livingston - Oakland - Macomb - Washtenaw - Wayne - Lenawee - Monroe

04	0100EST	3	29	Extreme Cold
05	2300EST			

Arctic air invaded Michigan behind the massive snowstorm. As usual, the Great Lakes offered some protection, as air was warmed as it crossed the lakes. But far southeast Michigan did not receive the benefits of the lakes, as arctic air coming from the northwest curled around the southern tip of Lake Michigan and turned northeast into the southeast corner of the state.

After a high of around 10 degrees on the 4th, temperatures nose-dived that night. The mercury plunged to -10 at Detroit Metro Airport, Adrian, and Ypsilanti, and -13 at Ann Arbor and Tecumseh. It was not until late afternoon on the 5th before temperatures rose to above zero. By midnight, the temperature at Detroit Metro Airport had risen all the way to 6 degrees.

The cold caused three deaths in Oakland County, all on the 4th. In Pontiac, a man froze to death while walking home early in the morning. An elderly woman somehow walked out of a nursing home in Troy early in the morning; she was found dead in the driveway later in the morning. In West Bloomfield, a young adult male was found frozen to death; the exact circumstances of his death were unknown.

The bitter cold caused numerous cases of frostbite. Injuries were reported near Pontiac and in Shelby Township on the 4th. On the 5th, a single hospital in Westland reported that "dozens suffered from exposure and frostbite." The number of injuries listed above is undoubtedly a gross underestimation.

M46OU, F86OU, M27OU

MIZ075>076-082>083

Washtenaw - Wayne - Lenawee - Monroe

11	0100EST	0	0	1.3M	Extreme Cold
	1000EST				

Temperatures plunged below zero in far southeast Michigan during the early morning hours of the 11th. At Detroit Metro Airport, the morning low was -4 degrees. The cold resulted in over 120 water main breaks in the city of Detroit. A very large water main ruptured in downtown Adrian, causing a water shortage for its 22,000 residents.

MIZ061

Genesee

12	1500EST	0	1	Extreme Cold
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Temperatures were running in single digits in the Flint area, with wind chills below zero. A 5 year old schoolboy wandered around outdoors after school was dismissed, until a local resident took him in. The young boy was hospitalized due to frostbite.

MIZ047>049-053>055-060>063

Midland - Bay - Huron - Saginaw - Tuscola - Sanilac - Shiawassee - Genesee - Lapeer - St. Clair

12	1600EST	0	0	Heavy Snow
13	0700EST			

A stationary front lay just south of Michigan on the afternoon of the 12th. A strong upper level disturbance moved toward the Great Lakes, causing snow to develop north of the front. In southeast Michigan, snowfall amounts were heavy near and north of Interstate 69. The heaviest snow occurred along the Lake Huron shoreline, as northeast winds at the surface allowed the snowfall to be enhanced by moisture off the lake.



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Snowfall amounts by county:

Bay County: 8" in Essexville; 6" in Bay City.

Genesee County: 10" in Grand Blanc; 7" in Flint.

Huron County: 11" in Harbor Beach; 9" in Bad Axe; 7" in Sebawaing.

Lapeer County: 6" in Lapeer.

Midland County: 8" in Midland.

St Clair County: 10" in Port Huron.

Saginaw County: 8" in St Charles; 6.8" in Freeland.

Sanilac County: 14" in Croswell and Port Sanilac; 12" in Lexington; 10" in Sandusky and Marlette.

Shiawassee County: 7" in Corunna.

Tuscola County: 10" in Caro; 8" in Akron; 6" in Cass City.

MIZ047>049-053>055-
060>063-068>070-
075>076-082>083

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12	1700EST	0	3	1.8M	Snow
14	2300EST				

In addition to the big snowstorms of the 2nd and the 12th-13th, several smaller snow events occurred in the first half of January. By the middle of the month, snowfall was nearing historic proportions, with January of 1999 already among one of the snowiest months ever in southeast Michigan. Compounding the problem was a sustained cold spell during the first half of the month, which prevented any of the snow from melting. As the snowpack grew toward two feet deep across southeast Michigan, it became more and more difficult to find places to put additional snowfall. In snowbound Detroit, the postal service took to delivering the mail via the "Good Humor man" method: the postal carrier would drive as close to his customers as he could, then honk his horn. Residents were then to come out and get their mail. Many Detroit residents had not received mail since before the January 2nd blizzard.

Some roofs across the area gave way under the immense weight of the snow. On the 12th, a portion of the roof collapsed at a shopping center in Canton Township (Wayne County); two stores were extensively damaged. The roof of a welding company in Green Oak Township (Livingston County) also collapsed. Additional snowfall that night caused several roof collapses on the 13th: a light industrial firm in Detroit, which damaged a gas line and started a fire; a bowling center in Commerce Township (Oakland County), where three people were injured; a vacant commercial building in Ann Arbor; a former lawn and garden store in Ypsilanti; a light industrial firm in Novi; a wholesale store in Dearborn; a train assembly building in Melvindale; and a pizza parlor in Monroe County. Also on the 13th, the roof of a two story office building in New Baltimore buckled. On the 14th, a roof covering an outdoor pool collapsed in Hudson.

Ice dams on roofs were another widespread problem. Heat escaping from homes melted some of the snow on the roof; as the meltwater ran down to the eaves, it refroze, as the eaves were not heated from underneath. Ice buildup on the eaves of roofs created ice dams; further meltwater had nowhere to go, and found its way through shingles and into ceilings. Tens of thousands of buildings suffered leaks, resulting in a barrage of calls to both roofers and insurance agents. Leakage got into the Clements Library of the University of Michigan in Ann Arbor, damaging or destroying several rare maps and atlases.

MIZ049

Huron

15	0600EST	0	0	Heavy Snow
	1400EST			

A weak area of low pressure formed over central Lake Huron early in the morning of the 15th. This low moved slowly southeast into Ontario during the day. A lake effect snow band was dragged along by the low, just grazing the northeast tip of Michigan's thumb. While most of Huron County enjoyed a partly to mostly sunny day, Port Hope received 7 to 9 inches of snow.



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MIZ060>063-068>070-075>076-082>083 **Shiawassee - Genesee - Lapeer - St. Clair - Livingston - Oakland - Macomb - Washtenaw - Wayne - Lenawee - Monroe**

17	1800EST	0	0	Thunderstorm
18	0200EST			

A line of thunderstorms crossed southeast Michigan from west to east after sunset on the 17th. The visual effect of almost continuous cloud-to-ground lightning, at night, reflecting off of a roughly two-foot snowpack, was quite extraordinary. Although no severe weather occurred, the storms still had quite an impact. The thunderstorms produced a half inch of rain, which fell onto the deep snowpack. The heavy rain, runoff, and snowmelt put a lot of water on area roads. That water froze overnight, leaving many highways a solid sheet of ice. Classes were cancelled in numerous school districts due to the icy roads

MIZ076

Wayne				
23	0400EST	0	0	Flood
25	0900EST			

Runoff from rainfall and rapid snowmelt of January 21st through 23rd caused some rivers in extreme southeast Michigan to exceed flood stage. Up to two inches of rain fell in this time period, and temperatures rose into the lower 50s. These combined to almost completely melt a snowpack that was initially around 18 inches deep across most of the area.

The Lower Rouge River at Inkster exceeded flood stage of 10.0 feet at 4 am on the 23rd. The river crested at 11.0 feet at 10 pm on the 24th, then fell below flood stage at 9 am on the 25th.

MIZ082>083

Lenawee - Monroe					
24	0000EST	0	0	25K	Flood
28	1300EST				

The River Raisin exceeded flood stage along virtually its entire length.

At Adrian, the River Raisin rose above flood stage of 13.0 feet at 5 am on the 25th. The river crested at 13.8 feet at 2 pm, then fell below flood stage at 7 am on the 26th.

At Blissfield, the River Raisin rose above flood stage of 683.0 feet at noon on the 24th. The river crested at 684.0 feet at 5 pm on the 25th, then fell below flood stage at 10 am on the 27th.

At Dundee, the River Raisin rose above flood stage of 650.0 feet at 10 am on the 26th. The river crested at 650.5 feet at 1 am on the 27th, then fell below flood stage at 4 pm.

An ice jam near Hellenberg Field in the city of Monroe, just downstream of the river gage, contributed to flooding there. At Monroe, the River Raisin rose above flood stage of 9.0 feet just after midnight early on the 24th. The river crested at 11.5 feet at 10 pm on the 25th, then fell below flood stage at 1 pm on the 28th. Seven people had to evacuate as flood waters inundated two homes along East Front Street. Parts of Elm Avenue, as well as Front Street, were closed

MIZ061-068>069

Genesee - Livingston - Oakland				
24	2300EST	0	0	Heavy Snow
25	0700EST			

A stationary front stretched across central lower Michigan from west to east, ahead of an advancing cold front. Snow developed late in the evening of the 24th as moisture surged into the area from the south. Most of southeast lower Michigan received anywhere from 1 to 4 inches of snow with the system; however, 6 inches of snow fell in Linden, Fenton, Howell, White Lake, and Clarkston.

Ann Arbor received 4.6 inches of snow, bringing the monthly total to 36 inches. This made January of 1999 the snowiest month ever in Ann Arbor (records date back to 1889).



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Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	